Prioritizing Critical Success Factors in PPP Projects for Government Building Redevelopment

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***Abstract*— Urban redevelopment through Public-Private Partnerships (PPPs) has emerged as a key strategy to tackle the challenges posed by vacant government-owned spaces. This study offers an in-depth analysis of how such spaces can be transformed into commercial buildings, focusing on the financial structures, legal frameworks, and project management strategies that ensure mutual advantages for both public and private entities.**

***Index Terms*—public private partnership, critical success factor, government.**

I. INTRODUCTION

India has the second-largest urban population globally, with over 300 million people residing in towns and cities. By 2030, this number is projected to exceed 40% of the total population, with more than 70 million people living in urban agglomerations. In response to the rapid pace of urbanization, the government has introduced several new initiatives aimed at addressing the growing demand. These schemes are designed to attract investment while simultaneously empowering and enhancing infrastructure in both the public and private sectors.

The objective is to create a balanced, sustainable approach to urban growth, ensuring that the necessary facilities and services can keep up with the rising population .

A Public-Private Partnership (PPP) is a contractual arrangement between a private company and the government, aimed at designing, financing, managing, operating, and implementing infrastructure services and facilities that were traditionally managed by the public sector. PPP involves a spectrum of collaborative relationships between public and private entities concerning infrastructure, services, and facilities. In essence, PPP represents a model of private participation in public projects, where the public and private sectors form a partnership to work jointly towards a shared objective. The primary goal of PPP is to combine the skills, expertise, and experience of both sectors to deliver improved services to citizens or customers. Rapid urbanization is leading to shortages of land, housing units, and commercial spaces. In every new development project, areas beyond the current boundaries are developed, necessitating significant funds for infrastructure. However, many existing urban plots could be redeveloped using PPP models for more effective land utilization.

A. Need To Study

India faces challenges in both public and private sectors for urban development: the public sector lacks expertise and quality, while the private sector struggles with adherence to guidelines and coordination with local authorities. Rapid urbanization has led to a severe shortage of land, housing, and commercial spaces, requiring significant investment. High land costs, unclear titles, and underutilized central plots contribute to land scarcity and inflated prices. This study explores the potential of Public-Private Partnership (PPP) models to redevelop these plots, optimizing land use, easing urban pressures, reducing government costs, and improving infrastructure.

B. Problem Statement

Due to growing urbanization there is a shortage of land, housing units, commercial center. In all new development plans stricter development of margins of developed areas is undertaken which needs much resources for development of infrastructure facilities. However, public authorities should seek to use many of the already existing plots within the city rather than moving outwards where land is abundant for incorporating innovative PPP models for land development.

C. Objective

The objective of ranking critical factors in Public-Private Partnership (PPP) for the redevelopment of

government buildings is to identify and prioritize the key elements that influence the success of such projects. These factors are crucial for ensuring that both public and private sectors achieve their goals effectively while delivering high-quality projects on time and within budget

II. METHEDOLOGY

The following method would be followed in the research process :

1) Problem statement would be defined with the help of literature.

2) Factors will be found out through interviews and literatures. And then, the relative importance index will be used for the questionnaire

3) This will be a questionnaire survey. Those respondents who are like Government officials, contractors, builders, etc.

4) Now, the responses collected are analyzed through SPSS software by finding the mean of all the responses.

5) The ranking of the analyzed factors will be calculated to find critical factors.

6) Then rating will be given accordingly, based on the mean.

III. DATA COLLECTION AND DATA ANALYSIS

A. Data collection

A study of the critical factors of the commercial sector using Public Private Partnership is carried out by collecting data in the form of questionnaire survey from Government officials, contractors, builders, and top managerial authorities. A total 43 factors are collected for questionnaire and are arranged under heads of General factors, Technical factors, Managerial factors, governing factors, Contractual factors, Financial factors, Operational factors, and Other factors.

B. Data Analysis

Questionnaire is developed and responses are collected from 48 respondents to evaluate the factors in commercia sector based on Relative Importance Index. The criticality of the success factor is determined based on mean values. Each CSF is categorized into five levels like extremely critical, Very critical, average critical, fairly critical and not critical. The following tables illustrate data interpretation using the statistical parameter. Mean of attribute represent average value reached by the question based on responses in SPSS software.

Descriptive Statistics							
	N	Range	Min	Max	Mean	Std. eviation	Variance
Current condition of the government-owned	48	3	2	5	3.96	.922	.849
vacant spaces for redevelopment	48	3	2	5	4.08	.846	.716
The impact of redevelopment projects on the local	48	4	1	5	3.94	.932	.868
community	48	4	1	5	3.77	.905	.819
Technology integration (e.g., smart building systems) in the	48	3	2	5	4.17	.859	.738
Geotechnical condition	48	4	1	5	3.48	1.368	1.872
Recourses availability	48	4	1	5	3.60	1.125	1.266
Construction technology	48	4	1	5	3.63	1.248	1.559
Transparent procurement process	48	3	2	5	3.96	.922	.849
Use of Latest technology	48	3	2	5	4.08	.846	.716
coordination between engineers, architects, and builders	48	4	1	5	3.94	.932	.868

manage project timeline(scheduling & controlling)	48	4	1	5	3.77	.905	.819
Risk shearing	48	3	2	5	4.17	.859	.738
Legal and Contractual Clarity	48	4	1	5	3.48	1.368	1.872
Budgetary Constraints	48	4	1	5	3.62	1.134	1.285
role of political will	48	4	1	5	3.63	1.248	1.559
Investment schedule and guaranteed revenue stream	48	2	3	5	4.40	.610	.372
Government acts	48	4	1	5	3.50	1.203	1.447
clearly and fairly are termination clauses	48	2	3	5	4.40	.736	.542
liability provisions	48	2	3	5	4.27	.676	.457
Dispute Resolution Mechanisms	48	4	1	5	3.67	1.136	1.291
Clarity of Contract Term	48	3	2	5	4.10	.831	.691
Operational Efficiency	48	2	3	5	4.40	.610	.372
resources (e.g., labor, materials)	48	4	1	5	3.50	1.203	1.447
Government Funding Contribution	48	2	3	5	4.40	.736	.542
Price changes and tariff changes	48	2	3	5	4.27	.676	.457
cost overruns managed	48	4	1	5	3.67	1.136	1.291
Impact of Economic Conditions (e.g., inflation, interest rates)	48	4	1	5	3.60	1.125	1.266
maintained financial accountability	48	4	1	5	3.63	1.248	1.559

From these mean values ranks are given to the critical success factors. Following table shows the ranks of critical success factors in descending order of mean value.

	N	Mean
Geotechnical condition	R1	4.60
Manage project time line	R2	4.23
Clearly and fairly are termination clauses	R3	4.10
Current condition of vacant space	R4	4.02
Clarity of contract team	R5	4.00
Price change and traffic changed	R6	3.98
Impact on local community of redevelopment project	R7	3.96
Availability of finance support from government	R8	3.94
Coordination between engineer architected and builder	R9	3.92
Transparency in process	R10	3.85
Construction technology	R11	3.85
Impact of economic condition	R12	3.81
Maintained financial accountability	R13	3.79
Work force manage in term of skill productivity and safety	R14	3.77
Dispute resolution mechanism	R15	3.73
Dispute resolution mechanism	R15	3.73
Recourses availability	R16	3.71

Financial risks management between public and private partner	R17	3.65
Legal and contractual clarity	R18	3.60
Cost overrun managed	R19	3.50
Liability provision	R20	3.50
Government funding contribution	R21	3.48
Role of political will	R22	3.42
Operational efficiency resources	R23	3.38
Government Act	R24	3.35
Investment schedule and granted revenue stream	R25	3.33
Risk shearing	R26	3.31
Budgetary constraints	R27	3.29
Latest technology use	R28	3.23
Technology integration in redevelopment process	R29	3.15

IV. RESULTS AND DISCUSSION

The results of this paper shows that 6 factors out of 29 are found out to be extremely critical then 16 factors are very critical and 8 are average critical. The extremely critical factors require higher degree of attention and control to manage the funds and resources in most efficient manner as compared to very critical and average critical.

Table Rating Of Critical Success Factors According To Their Criticality

MEAN	VALUE IMPACT
0-1	NOT CRITICAL
1-2	FAIRLY CRITICAL
2-3	AVERAGE CRITICAL
3-4	VERY CRITICAL
4-5	EXTREMELY CRITICAL

Table IV Rating of Critical Success Factor And Their Numbers

CFS	VALUE IMPACT
NOT CRITICAL	0
FAIRLY CRITICAL	0
AVERAGE CRITICAL	8
VERY CRITICAL	16
EXTREMELY CRITICAL	5

V. CONCLUSION

The results indicate that the critical success factors enable the project manager and supervisory authorities to identify the relevant areas which have a bearing on the performance of the project. Moreover, CSF are also very crucial in ascertaining and analyzing the identified risk factors which can likely take place in any project. In addition, the manager can exert the degree of control on CSF based on their critical levels.

REFERENCES

[1]. Ashwin Mahalingam M.ASCE, "PPP Experiences in Indian Cities: Barriers, En- ablers, and the Way Forward", Journal of Construction Engineering and Manage- ment, Vol. 136, No. 4, April 1, 2010. pp 419-429

[2]. Afeez OlalekanSanni ,Maizon Hashim, "Building infrastructure through Public Private Partnerships in sub-Saharan Africa: Lessons from South Africa" Procedia Social and Behavioral Sciences 143 (2014) pp 133 -138

[3]. LiYaning Tang, Qiping Shen, Martin Skitmore; and Eddie W. L. Cheng, "Ranked Critical Factors in PPP Briefings", J. Manage. Eng., 2013, 29(2): 164-171

[4]. Jui-Sheng Chou, Dinar Pramudawardhani, "Cross-country comparisons of key drivers, critical success factors and risk allocation for public-private partnership projects" , Elsevier Ltd 2014

[5]. Xiaodan Li, Hao Yang, Wenjing Li, Zhiting Chen, "Public-private partnership in residential brownfield redevelopment: case studies of Pittsburgh", International Conference on Sustainable Design, Engineering and Construction, (2016) pp 1534 – 1540

[6]. Kristine Thomassen, Siril Vassb, Espen Solheim-Kile, Jardar Lohne, [14]Public- Private

Partnership: Transaction Costs of Tendering Procedia Computer Science 100 (2016) pp 818 825